



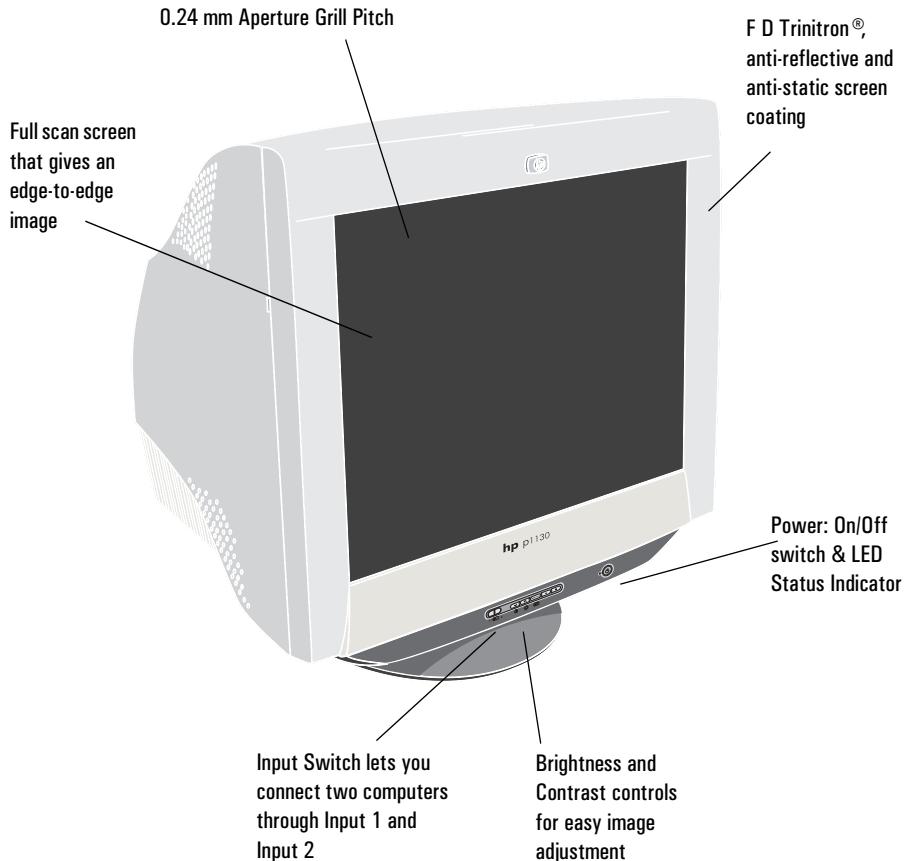
www.hp.com/go/monitorsupport

hp 21-inch color
monitor

p4819a

user's guide





User's Guide

hp p1130

P4819A

21-inch Color Monitor

(19.8-inch Viewable Image)

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Important Safety Instructions

WARNING

For your safety always connect equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with the equipment, or one in compliance with your national safety standards. This equipment can be disconnected from the power by removing the power cord from the power outlet. This means the equipment must be located close to an easily accessible power outlet.

To avoid electrical shock, do not open the monitor's cover. There are no user-serviceable parts inside. Only qualified service personnel should service these parts.

Make sure your PC is powered off before connecting or disconnecting a display peripheral.

Working in Comfort

Thank you for selecting HP monitor equipment.

To optimize your comfort and productivity, it's important that you set up your work area correctly and use your HP equipment properly. With that in mind, we have developed some setup and use recommendations for you to follow based on established ergonomic principles.

You can consult the online version of Working in Comfort preloaded on the hard disk of HP computers, or visit HP's Working in Comfort web site at:

<http://www.hp.com/ergo/>

CAUTION

The monitor is quite heavy (the weight is shown in the technical specifications). We recommend you ask the assistance of a second person when lifting or moving it.

The lightning flash with arrowhead symbol, situated within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage which may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and servicing instructions in the literature accompanying the appliance.

Minimizing Eye Strain

To avoid screen flicker and minimize eye strain, use the highest supported image refresh rate for the chosen resolution. It is recommended that you use a refresh rate of 85 Hz. The image refresh rate is the number of times per second that the image is refreshed.

Minimizing Energy Consumption

If your computer supports VESA monitor power management (available on many HP computers), you can minimize the power consumed by the monitor. There is one power saving mode:

- Active off mode¹ (uses less than or equal to 3W). In this mode, the monitor's front panel indicator light is amber.

To set these power saving modes, refer to the manual that came with your computer. If your screen is not displaying an image, check the front panel indicator light first as your monitor may be in a power saving mode.

1. Unique power saving mode which is activated if SYNC, H SYNC or V SYNC inactive.

What Your New Monitor Offers

Your HP monitor is an FD Trinitron 21-inch (19.8-inch viewable image), high resolution, multi-synchronous color monitor. Multi-synchronous means that the monitor supports a range of video modes. It is optimized for use with all Hewlett-Packard computers.

Your HP color monitor has the following features:

- A 21-inch FD Trinitron tube with a 19.8-inch viewable image, 0.24 mm aperture grill pitch for excellent graphics and an anti-glare coating to minimize reflection
- Support of video modes up to 2048 x 1536 at 75 Hz refresh rates
- Image adjustment using on-screen display menus. Includes color temperature adjustment and image manipulation controls to optimize the quality and position of the image
- Monitor power management system (VESA¹ standard) controlled from suitably equipped HP computers to automatically reduce the power consumption of the monitor. As an ENERGY² partner, HP has determined that this product meets the ENERGY STAR guidelines for energy efficiency
- Monitor Plug and Play capability (VESA DDC1/2B standard) that enables the monitor to identify itself to suitably equipped HP computers
- Two video inputs to connect to two PCs
- Compliance with ISO 9241-3/-7/-8 ergonomic standards
- Complies with MPRII guidelines for upper limits of electrostatic and magnetic field emissions, from the Swedish National Board for Measurement and Testing
- Your HP monitor complies with TCO99 requirements. (Refer to "TCO99 Ecology Energy Emissions Ergonomics" on page 40).

1. VESA is the Video Electronics Standards Association

2. ENERGY STAR is a trademark of United States Environmental Protection Agency (EPA)

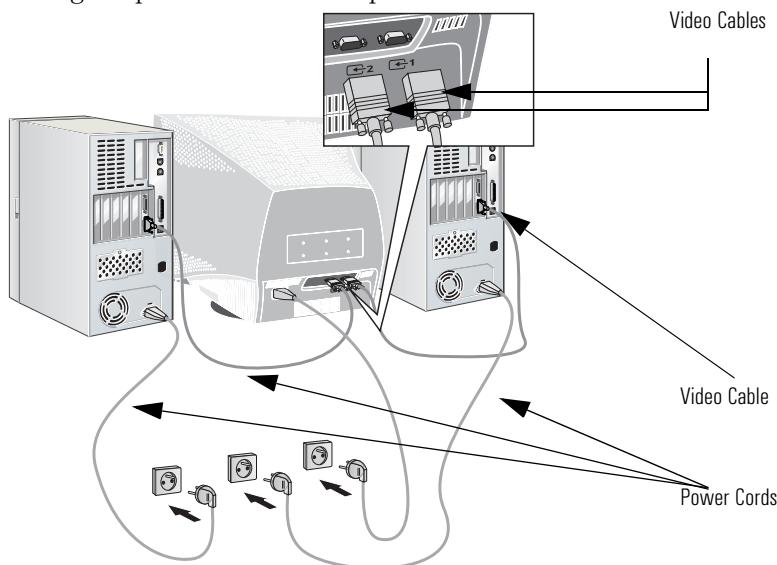
Setting Up Your Monitor

Where to Place the Monitor

Place your monitor on a flat sturdy surface. Ensure the operating site is free from excessive heat, moisture, and sources of electromagnetic fields. Sources of electromagnetic fields include transformers, motors and other monitors.

Connecting the Cables

- 1 Before you connect any cables, refer to the safety instructions at the beginning of this manual. Make sure your computer and monitor are switched off.
- 2 Connect the video input cable (it has a 15-pin plug) to one of the video outlets on your computer. You can use both outlets to connect two computers.
- 3 Tighten the thumbscrews on the plug.
- 4 Connect the power cord to the monitor.
- 5 Plug the power cord into the power outlet.



NOTE

The location of your computer's video cable connector may be different to the one shown. Refer to the manual that came with your computer, if necessary.

How To Install The Drivers

Windows 2000:

To install the driver:

- 1 Click Start, select Settings, then click Control Panel.
- 2 Double-click Display and select the Settings tab.
- 3 Click Advanced Properties or Advanced, and select the Monitor tab.
- 4 Click Properties.
- 5 Select the Driver tab.
- 6 Click Update Driver and click Next.
- 7 Select the recommended option and click Next.
- 8 Select the Specify a Location box.
- 9 Find and open the *.inf file.
- 10 Click Next to install the selected monitor driver.

Windows XP:

To install the driver:

- 1 Click Start, then click Control Panel.
- 2 Click Appearance and Themes.
- 3 Select Display and then Settings.
- 4 Click Advanced and select the Monitor tab.
- 5 Click Properties and select the Drivers tab.
- 6 Click update Driver.
- 7 Insert the Windows CD-ROM.
- 8 Select 'Install from a list' option for automatic selection or manually specify the path yourself.
- 9 Click Next.
- 10 If you are using a CD-ROM, select the 'Search removable media' option. If you are not using a CD-ROM, select the 'Include this location in the search' option to browse.

Windows 95 or Windows 98:

In order to take advantage of the Plug & Play functionality of your Windows 95/98 operating system, HP Monitors come with a driver that lets you gain full optimization of your monitor.

To install this driver follow these steps:

- 1 Click the Start button, select Settings, then click Control Panel.
- 2 Double-click the Display icon and select the Settings tab.
- 3 Click Advanced Properties or Advanced, and select the Monitor tab.
- 4 Click the Change button in order to select the model of HP Monitor you are using.
- 5 Click the Have Disk... button.
- 6 Click the Browse... button.
- 7 Find and select the *.inf file.
- 8 Press the OK button and select your monitor type in the Models box.

Your operating system and your HP Monitor are now set up to work in optimum conditions.

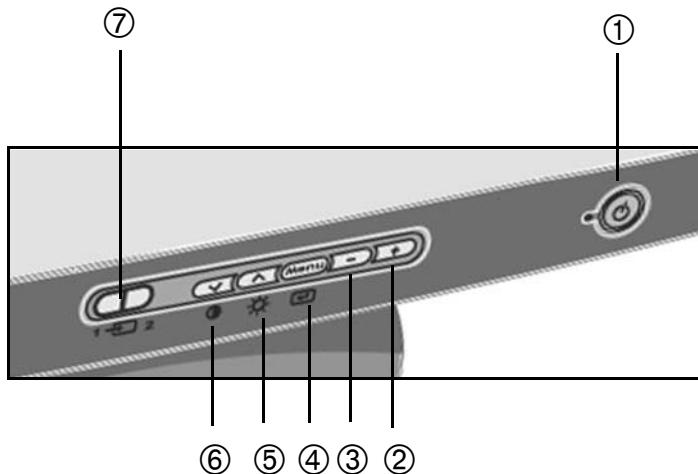
If your Windows 95/98 version is different or you need more detailed installation information, please refer to Windows 95/98 user's manual.

HP regularly updates the driver each time a new monitor is released. To download the latest up-to-date version, visit our HP Monitors Support web site at:

<http://www.hp.com/go/monitorsupport>

Using Your Monitor

The illustration below shows the location of the function keys which operate the monitor.



① Power Switch

This button switches the monitor on and off.

② Adjustment Button +

This button increases the level of the selected function.

③ Adjustment Button -

This button decreases the level of the selected function.

④ Menu Button

Use this button to select the menu and select the highlighted function.

⑤ Brightness and Scroll Up Button

This button selects the Brightness menu and scrolls up in menus.

⑥ Contrast and Scroll Down Button

This button selects the Contrast menu and scrolls down in menus.

⑦ Input Switch

This button selects INPUT 1 (video input 1 connector) or INPUT 2 (video input 2 connector).

NOTE

If the power management function of your computer is working properly, you do not need to switch the monitor off or on. This occurs automatically.

Using the On-Screen Menu

The following is an overview showing how to use the On-Screen Menu facility using the  /  /  and  / 

To display the MENU.

Press the  button to display the MENU on your screen.

To select the menu you want to adjust.

Press the  /  buttons to highlight the desired menu. Press the  button to select the menu item.

To adjust the menu.

- 1 Press  /  the buttons to select the item you want to adjust.
- 2 Press the  /  buttons to make the adjustment.

To close the menu.

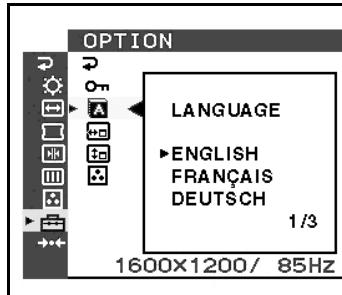
Use the  /  buttons to select  EXIT. If no buttons are pressed, the menu closes automatically after about 30 seconds.

Selecting the On-Screen Menu Language

English, French, German, Spanish, Italian, Dutch, Swedish, Russian and Japanese versions of the on-screen menus are available. The default setting is English.

To select a language of your choice

- 1 Press the  button.
- 2 Press the  /  buttons to select  OPTION and press the  button again.
- 3 Press the  /  buttons to select LANGUAGE and press the  button.



- 4 Press  /  the buttons to select the language you want and press the  button once more to confirm your selection.
- 5 To close the menu use the  /  buttons to select  EXIT. If no buttons are pressed, the menu closes automatically after about 30 seconds.

To reset to English

Repeat steps 1-5 and select English as the chosen language.

Selecting the Input Signal

You can connect two computers to this monitor using the video input 1  and video input 2  connectors. To select one of the two computers:

- 1 Move the  switch on the front of the monitor to either 1  or 2 
- 2 The selected input (INPUT 1 or INPUT 2) appears on the screen for 3 seconds.

NOTE

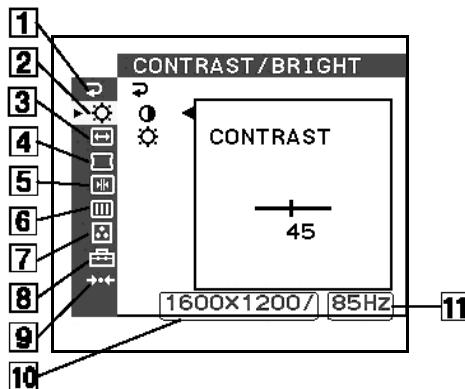
If no signal is input to the selected connector, the message NO SIGNAL appears on the screen. After a few seconds, the monitor enters power saving mode. If this happens, switch to the other connector.

Displaying the Current Input Signal

Pressing the  button displays the horizontal and vertical frequencies of the current input signal. If the signal matches one of the monitor's factory preset modes, the resolution is displayed.

Navigating the menu

- 1 Press the  button to display the MENU on your screen.



- 2 Use the  /  and  buttons to select one of the following menus. The icons on the left of the MENU show the currently selected function.
- 3 Select EXIT to close the menu.

 1. Exit

Select to exit the on-screen menu



2. Contrast/Brightness

Adjusts the picture's contrast and brightness



3. Size/Center

Adjusts the picture's size, centering or zoom



4. Geometry

Adjusts the picture's rotation and shape

 5. Convergence

Adjusts the picture's horizontal and vertical convergence

 6. Screen

Adjusts the landing (the color purity in the 4 corners), moire cancellation effect and manually degausses the monitor.

 7. Color

Adjusts the picture's color temperature. You can use this to match the colors of a printed picture.

 8. Option

Selects the chosen language, locks the OSD and changes the menu's on-screen position

 9. Reset

Resets the settings of your monitor

10. Resolution

Displays the current resolution of your monitor

11. Refresh

Displays the current refresh rate

Customizing Your Monitor

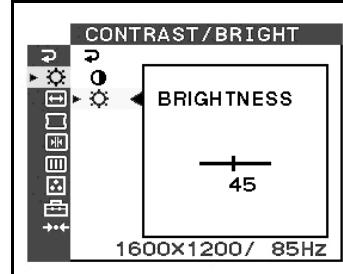
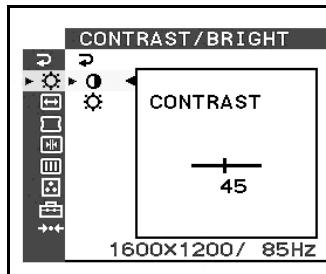
You can make numerous adjustments to your monitor using the On-Screen Menu.

Adjusting the brightness and contrast

Brightness and contrast adjustments are made using a separate BRIGHTNESS/CONTRAST menu.

These settings are stored in memory for the signals from the currently selected input connector.

- 1 Press either the  BRIGHTNESS or  CONTRAST button. The CONTRAST/BRIGHT menu appears on the screen.

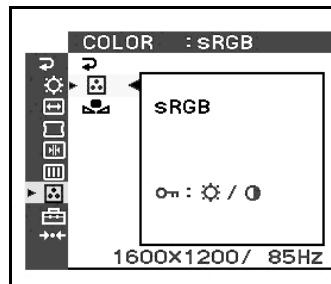


- 2 Press the  /  buttons to adjust the brightness or contrast.

If you are using the sRGB mode

NOTE

If you selected the sRGB mode in the COLOR MODE of the OPTIONS menu, the following BRIGHTNESS/CONTRAST menu appears on the screen.



For more information about using the sRGB mode, see page 24.

Adjusting the picture (SIZE/CENTER)

Adjusting the size of the picture (SIZE/CENTER)

This setting is stored in memory for the current input signal.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  SIZE/CENTER and press the  button again. The SIZE/CENTER menu appears on the screen.
- 3 Press the  /  buttons to select  for horizontal adjustment, or  for vertical adjustment and then press the  button.
- 4 Press the  /  buttons to adjust the size.

Adjusting the centering of the picture (SIZE/CENTER)

This setting is stored in memory for the current input signal.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  SIZE/CENTER and press the  button again. The SIZE/CENTER menu appears on the screen.
- 3 Press the  /  buttons to select  for horizontal adjustment, or  for vertical adjustment and then press the  button.
- 4 Press the  /  buttons to adjust the centering.

Automatically sizing and centering the picture (AUTO)

This setting is stored in memory for the current input signal.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  SIZE/CENTER and press the  button again. The SIZE/CENTER menu appears on the screen.
- 3 Press the  /  buttons to select  AUTO and then press the  button. The adjustment window appears on the screen.
- 4 Press the  /  buttons to select OK. The picture will automatically fill the screen.

Adjusting the shape of the picture (GEOMETRY)

The GEOMETRY settings allow you to adjust the rotation and shape of the picture.

The  (rotation) setting is stored in memory for all input signals. All other settings are stored in memory for the current input signal.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  GEOMETRY and press the  button again. The GEOMETRY menu appears on the screen.
- 3 Press the  /  buttons to select the desired adjustment item and press the  button. The adjustment bar appears on the screen.
- 4 Press the  /  buttons to make the adjustment.

Select	To
	rotate the picture
	expand or contract the picture sides
	shift the picture sides to the left or right
	adjust the picture width at the top of the screen
	shift the picture to the left or right at the top of the screen
	reset all the GEOMETRY settings

Adjusting the convergence (CONVERGENCE)

The CONVERGENCE settings allow you to adjust the quality of the picture by controlling the convergence. The convergence refers to the alignment of the red, green, and blue color signals.

If you see red or blue shadows around letters or lines, adjust the convergence.

These settings are stored in memory for all input signals.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  CONVERGENCE and press the  button again. The CONVERGENCE menu appears on the screen.
- 3 Press the  /  buttons to select the desired adjustment item and press the  button. The adjustment bar appears on the screen.
- 4 Press the  /  buttons to make the adjustment.

Select	To
	horizontally shift red or blue shadows
	vertically shift red or blue shadows
 T	vertically shift red or blue shadows at the top of the screen
TOP	
 B	vertically shift red or blue shadows at the bottom of the screen
BOTTOM	
	reset all the CONVERGENCE settings

Adjusting the quality of the picture (SCREEN)

The SCREEN settings allow you to adjust the quality of the picture by controlling the moire and the landing.

- If the color is irregular at the corners of the screen, adjust the landing.
- If elliptical or wavy patterns appear on the screen, cancel the moire.

The CANCEL MOIRE and MOIRE ADJUST settings are stored in memory for the current input signal. All other settings are stored in memory for all input signals.

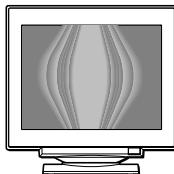
- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  SCREEN and press the  button. The SCREEN menu appears on the screen.
- 3 Press the  /  buttons to select the desired adjustment item. Then press the  button.
- 4 Press the  /  buttons to make the adjustment.

Select	To
 LANDING	reduce any color irregularities in the screen's top left corner to a minimum.
 LANDING	reduce any color irregularities in the screen's top right corner to a minimum.
 LANDING	reduce any color irregularities in the screen's bottom left corner to a minimum.
 LANDING	reduce any color irregularities in the screen's bottom right corner to a minimum.
	adjust the level of moire cancellation until it is at minimum.
CANCEL MOIRE	
	degauss the monitor.
	reset all SCREEN settings.

NOTE

Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern of the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire

**NOTE**

The picture may become fuzzy when CANCEL MOIRE is set to activated.

Adjusting the color of the picture (COLOR)

The COLOR settings allow you to adjust the picture's color temperature by changing the color level of the white color field. Colors appear reddish if the temperature is low, and bluish if the temperature is high. This adjustment is useful for matching the monitor's color to a printed picture's colors.

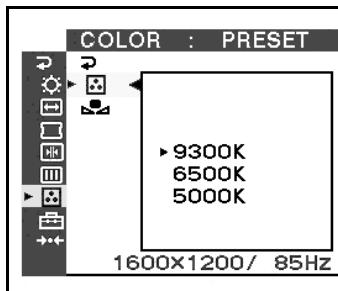
Selecting the color mode

There are four color adjustment modes: PRESET, VARIABLE, EXPERT and sRGB. To select one of the four modes:

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  OPTION and press the  button again. The OPTION menu appears on the screen.
- 3 Press the  /  buttons to select  COLOR MODE and press the  button again.
- 4 Press the  /  buttons to select the COLOR MODE.

PRESET mode

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  COLOR and press the  button again. The COLOR menu appears on the screen.
- 3 Press the  /  buttons to highlight  and press the  button again. The adjustment bar appears.



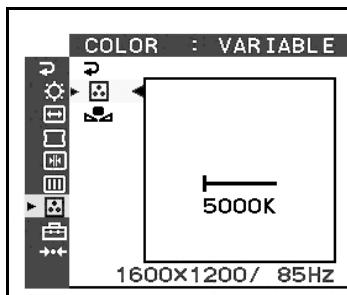
- 4 Use the  /  buttons to select the desired temperature.

NOTE

Lowering the temperature below 9300K may cause the whites to change from a bluish hue to red.

VARIABLE mode

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  COLOR and press the  button again. The COLOR menu appears on the screen.
- 3 Press the  /  buttons to highlight  and press the  button again. The adjustment bar appears.

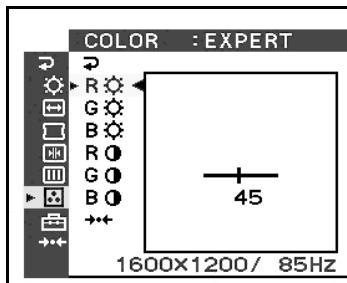


- 4 Use the  /  buttons to adjust the color temperature. The new setting will be stored in memory.

EXPERT mode

You can make additional adjustments to the color in greater detail by selecting the EXPERT mode.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  COLOR and press the  button again. The COLOR menu appears on the screen.



Adjusting the color of the picture (COLOR)

- 3 Press the  /  buttons to select the R (red), G (green) or B (blue) component of the input signal for both GAIN () and BIAS ().
- 4 Press the  /  buttons to make the adjustment.

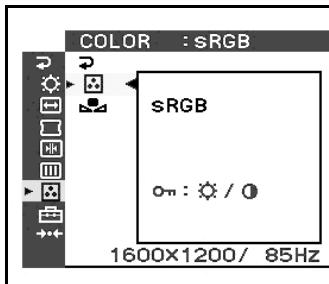
sRGB mode

The sRGB color setting is an industry standard color space protocol designed to correlate the displayed and printed colors of sRGB compliant computer products. To adjust the colors to the sRGB profile, simply select sRGB mode in the COLOR menu of the OPTION menu.

However, in order to display the sRGB colors correctly ($\gamma=2.2$, 6500K), you must set your computer to the sRGB profile and adjust the brightness () and contrast. For information on how to change the brightness () and contrast, see page 16.

NOTE

Your computer and other connected products (such as a printer), must be sRGB compliant.



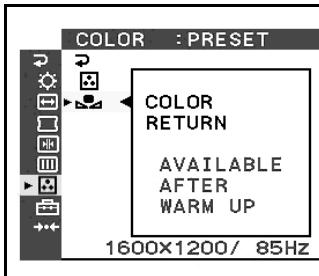
Restoring the color from the EASY or sRGB menus

The colors of most display monitors tend to gradually lose brilliance over several years of service. The COLOR RETURN feature found in the PRESET, VARIABLE and sRGB modes allows you to restore the color to the original factory quality levels. The explanation below explains how to restore the monitor's color from the PRESET menu.

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  COLOR and press the  button again. The COLOR menu appears on the screen.
- 3 Press the  /  buttons to select  COLOR RETURN and press the  button again.
- 4 Press the  /  buttons to select OK.

NOTE

Before using this feature, the monitor must be in normal operation mode (green power indicator on) for at least 30 minutes. If the monitor goes into power saving mode, you must return the monitor to normal operation mode and wait for 30 minutes for the monitor to be ready. You may need to adjust your computer's power saving settings to keep the monitor in normal operation mode for the full 30 minutes. If the monitor is not ready, the following message will appear:



The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.

Additional settings (OPTION)

You can manually degauss the monitor, change the menu position, and lock the controls. To adjust one of the OPTION menu adjustment items:

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight  OPTION and press the  button again. The OPTION menu appears on the screen.
- 3 Press the  /  buttons to select the desired adjustment item. Adjust the selected item according to the following instructions.

Degaussing the screen

The monitor is automatically degaussed when the power is turned on.

Changing the menu position

Change the menu position if it is blocking an image on the screen.

To change the menu on-screen position:

Press the  /  buttons to select  OSD POSITION for horizontal adjustment, or  OSD POSITION for vertical adjustment. Then press the  /  buttons to shift the on-screen menu.

Locking the controls

To protect adjustment data by locking the controls

Press the  /  buttons to select  CONTROL LOCK and press the  button. Then press the  /  buttons to select ON.

NOTE

Only the POWER switch, MENU button, INPUT switch, and CONTROL LOCK of the OPTION menu will operate. If any other items are selected, the  mark appears on the screen.

To cancel the control lock

Repeat the procedure above and set  CONTROL LOCK to OFF.

Resetting the adjustments

This monitor has three reset methods. Use the ➔➡➡ RESET button to reset the adjustments.

Resetting all the adjustment data for the current input signal

- 1 Press the  button. The MENU appears on the screen.
- 2 Press the  /  buttons to highlight ➔➡➡ RESET and press the  button again.
- 3 Press the  /  buttons to select ➔➡ 1 and press the  button again.

The following items are not reset by this method:

- on-screen menu language
- adjustment mode in the COLOR menu (PRESET, VARIABLE, EXPERT, sRGB)
- on-screen menu position
- color temperature setting in the PRESET mode.

Resetting all of the adjustment data for all input signals

Follow the above procedure but select ➔➡➡ 2 during step 3.

NOTE

The ➔➡➡ (reset) button does not function when  is set to ON.

Supported Video Modes

Your monitor comes with the standard modes shown in the table below. It also supports intermediate video modes. With the intermediate modes, the displayed image may need to be optimized using the buttons on the front panel. All modes are non-interlaced. Your monitor is GTF¹ compatible.

Factory Optimized Modes:

Resolution	Refresh Rate/Hz
640 x 400	70
640 x 480	60, 75, 85
800 x 600	75, 85
1024 x 768	75, 85
1280 x 1024	75, 85
1600 x 1200	75, 85, 85GTF*
1800 x 1440	80GTF*
1920 x 1440	85

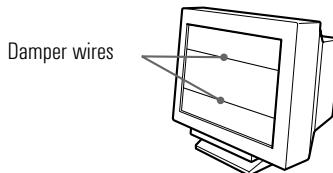
1. GTF - General Timing Formula.

Troubleshooting

Refer to this section, before contacting technical support.

If thin lines appear on your screen (damper wires)

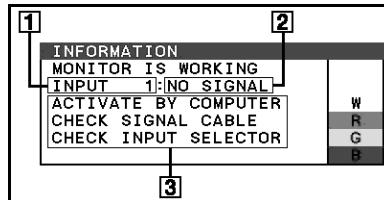
The lines you are experiencing on your screen are normal for the Trinitron monitor and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white). The aperture grille is the essential element that makes a Trinitron picture tube unique by allowing more light to reach the screen, resulting in a brighter, more detailed picture.



On-screen messages

If there is something wrong with the input signal, one of the following messages appears on the screen.

If NO INPUT SIGNAL appears on the screen



1 This message shows the currently selected INPUT.

2 NO INPUT SIGNAL. This indicates that no signal is input from the selected connector.

Troubleshooting

3 The Remedies

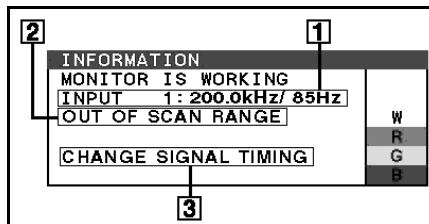
One or more of the following messages may appear on the screen.

If ACTIVATE USING PC appears on the screen, try pressing any key on the computer, and confirm that your computer's graphic board is completely seated in the correct bus slot.

If CHECK INPUT SELECTOR appears on the screen, try changing the input signal.

If CHECK SIGNAL CABLE appears on the screen, check that the monitor is correctly connected to the computer.

If OUT OF SCAN RANGE appears on the screen



1 This message shows the currently selected connector (INPUT 1 or INPUT 2). If the monitor recognizes the frequencies of the current input signal, the horizontal and vertical frequencies are also displayed.

2 This indicates that the input signal is not supported by the monitor's specifications.

3 If you are replacing an old monitor with this monitor, reconnect the old monitor. Then adjust the computer's graphics card so that the horizontal frequency is between 30 - 130 kHz, and the vertical frequency is between 48 - 170 Hz.

No picture and LED is off

- Check if monitor is switched ON
- Check if power cord is properly connected
- Check if electrical outlet is connected
- Test if monitor works on another PC previously set to monitor's supported resolution

No picture and LED is on

- Check if monitor is not in power saving mode
- Try changing the video input selection
- Adjust contrast and brightness through Menu using the control buttons
- Check if PC is switched on
- Check if video cable has no bent pins
- Test if monitor works

Colors are not pure

- Degauss your monitor
- Shut down your monitor and switch it on after 30 minutes

Picture is not centered

- Adjust picture through Menu using the control buttons

Picture is fuzzy

- Use the Recall function
- Reduce contrast through Menu using the control buttons
- Adjust moire reduction to zero

Technical Specifications

PICTURE TUBE	Size	21-inch, 19.8-inch viewable image
	Aperture Grill Pitch	0.24 mm (0, 24 mm)
	Face Plate	wide anti-reflective anti static-coating
INTERFACE	Detachable Video Cable with 15-pin mini D-SUB Connector	
SCANNING FREQUENCY	Horizontal	30 to 130 kHz
	Vertical	50 to 170 Hz
MAX. RESOLUTION	2048 x 1536 (75 Hz)	
RECOMMENDED RESOLUTION:	From 1280 x 1024 (85 Hz) to 1920 x 1440 (85 Hz)	
WARM-UP TIME	30 minutes to reach optimum performance level	
Max PIXEL CLOCK	<370 MHz	
IMAGE SIZE	Standard: 388 (W) x 291 (H) mm or 15.2 (W) x 11.4 (H) in Max: 404 (W) x 302 (H) mm or 15.9 (W) x 11.9 (H) in	
POWER MANAGEMENT	On 135W (max)	Constant green LED
	Active Off 3W (max)	Constant Amber LED
	Power Off 0W	LED is Off
POWER SOURCE	AC 90 to 264 V, 50/60 Hz (max current) 2A	
OPERATING ENVIRONMENT	Temperature	10°C to 40 °C
	Humidity	10% RH through 80% RH (without condensation)
STORAGE ENVIRONMENT	Temperature	0 °C to 60 °C
	Humidity	5% RH through 90% RH (without condensation)
SHIPPING ENVIRONMENT with PACKAGING	Temperature:	- 40° to + 60°
	Humidity	5% RH through 95%° RH (without condensation)
CABINET DIMENSIONS	502 (H) 497 (W) 490 (D) mm or 19.7 (H) x 19.6 (W) x 19.3 (D) in	
WEIGHT	30.5 kg (30, 5 kg) or 67.2 lbs (67, 2 lbs)	
TIKT/SWIVEL STAND	Tilt Angle	- 5° to 15°
	Swivel Angle	- 90° to 90°

Care and Cleaning

Do not place anything on top of the monitor. Doing so may block the monitor vents and cause damage to the monitor due to overheating. Do not let liquid get on or into the monitor. To maximize screen life and prevent damage to the picture tube (such as burned phosphor due to leaving the same image on the screen for a long time), it is recommended that you:

- Use the monitor power management system (on HP computers) or a screen saver program.
- Avoid setting contrast and brightness to their maximum levels for prolonged periods.
- If you do not have a power management system or a screen saver program, switch the monitor off or reduce the brightness and contrast to minimum levels when the monitor is not in use.

Your monitor has an anti-glare, anti-static screen coating. To prevent damage to the monitor screen's coating, use a regular household glass cleaner when cleaning the screen. To clean the screen:

- 1 Switch the monitor off and remove the power plug (pull the plug, not the cable).
- 2 Wet a soft cotton cloth with the cleaning solution and gently wipe the screen. Do not spray cleaner onto the screen because the cleaner may drip inside the monitor.
- 3 Dry with a clean, soft cotton cloth. Do not use any type of abrasive pad, alkaline cleaner, scouring powder or solvents such as alcohol or benzine as they might damage the anti-reflective coating.

Environmental Information

HP has a strong commitment toward the environment. Your HP monitor has been designed to respect the environment as much as possible.

HP can also take back your old monitor for recycling when it reaches the end of its useful life. In fact, HP has a product take-back program in several countries. The collected equipment is sent to one of HP's recycling facilities in Europe or the USA. As many parts as possible are reused. The remainder is recycled. Special care is taken for batteries and other potentially toxic substances, which are reduced to non-harmful components through a special chemical process. If you require more details about HP's product take-back program, contact your dealer or your nearest HP Sales Office.

Hardware Warranty

PART I - HP General Hardware Warranty

General

This HP Monitor Hardware Warranty Statement gives you, the customer, express warranty rights from HP, the manufacturer.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

THE LAWS OF YOUR COUNTRY MAY PROVIDE FOR DIFFERENT WARRANTY RIGHTS. IF SO, YOUR AUTHORIZED HP DEALER OR HP SALES AND SERVICE OFFICE CAN PROVIDE YOU WITH DETAILS.

Warranty repair or replacement.

Model	Warranty Period	Service Provided	
P4819A	3 years international limited Hardware Warranty	Rest of Asia Pacific: 3 years parts and labor on-site service for first year, and return to HP repair or authorized service center for the following 2 years	A
		USA and Canada: 3 years on-site next second business day exchange	F
		Europe: 3 years parts and labor next business day exchange	E
	1 year	Japan: 1 year parts and labor return to bench	D

Hewlett-Packard (HP) warrants this monitor hardware product, or accessory against defects in materials and workmanship for the applicable warranty period stated above, commencing from the date of delivery of the product to the end-user customer.

HP does not warrant that the HP hardware will operate uninterrupted or error free.

If, during the product warranty period, HP is unable, within a reasonable time, to repair or replace your product to the condition as warranted, you will be entitled to a refund (in the amount of the product purchase price) upon prompt return of the product to your authorized HP dealer or other HP designate. Unless otherwise stated or agreed upon in writing with HP, all hardware components must be returned for refund with the entire system process unit. HP software is covered by the HP Software Product Limited Warranty located in your HP product manual. Unless otherwise stated, and to the extent permitted by local law, hardware products may contain remanufactured parts (equivalent to new in performance) or parts which may have been subject to prior incidental use. HP may repair or replace

hardware products (i) with products which are equivalent in performance to the products being repaired or replaced but which may have been subject to prior use, or (ii) with products which may contain remanufactured parts equivalent to new in performance or parts which may have been subject to prior incidental use.

Proof of Purchase and Warranty Period

In order to receive service or support for your hardware product for the warranty period, proof of the original purchase date of the product may be required in order to establish the delivery date of your product. If the delivery date is not available, either the purchase date or the manufacturer's date (located on the product) becomes the beginning of the warranty period.

Limitation of Warranty

Warranty does not apply to defects resulting from: (a) improper or inadequate maintenance or calibration; (b) software, interfacing, parts or supplies not supplied by HP; (c) unauthorized repair, maintenance, modification or misuse; (d) operation outside of the published operating specifications for the product; (e) improper site preparation or maintenance; or (f) such other exclusions as may be expressly set forth in this Warranty Statement.

HP MAKES NO OTHER EXPRESS WARRANTY, WHETHER WRITTEN OR ORAL, WITH RESPECT TO THIS PRODUCT.

TO THE EXTENT ALLOWED BY APPLICABLE LOCAL LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY SET FORTH ABOVE.

Limitation of Liability and Remedies

TO THE EXTENT ALLOWED BY APPLICABLE LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL HP BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGE, WHETHER BASED ON WARRANTY CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

The foregoing limitation of liability shall not apply in the event that any HP product sold hereunder is determined by a court of competent jurisdiction to be defective and to have directly caused bodily injury, death, or property damage. To the extent allowed by applicable local law, HP's liability for property damage does not exceed the greater of \$50,000 or the purchase price of the specific product that caused such damage.

PART II - Year 2001 Warranty

Subject to all of the terms and limitations of the HP Limited Warranty Statement provided with this HP Product, HP warrants that this HP Product will be able to accurately process date data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the Product documentation provided by HP (including any instructions for installing patches or upgrades), provided that all other products (e.g. hardware, software, firmware) used in combination with such HP Product(s) properly exchange date data with it. The duration of the Year 2000 warranty extends through January 31, 2001.

Regulatory Information

DECLARATION OF CONFORMITY

According to ISO/IEC Guide 22 and CEN/CENELEC EN 45014

Manufacturer's Name: HEWLETT-PACKARD France

Manufacturer's Address: 5, Avenue Raymond Chanas - EYBENS
38053 GRENOBLE CEDEX 09 -FRANCE

Declares, that the products:

Product Name: HP 21" CRT color Monitor P4819**

(* can be any alphanumerical character)

Conform(s) to the following Product Specifications:

SAFETY

-International: IEC 60950:1991 + A1 + A2 + A3 + A4 / GB4943-1995.

-Europe: EN 60950:1992 + A1 + A2 + A3 + A4 + A11.

ELECTRO MAGNETIC COMPATIBILITY

- CISPR22:1997 / EN55022:1998 Class B

- CISPR24:1997 / EN55024:1998

- IEC 61000-3-3:1994 / EN61000-3-3:1995

- GB9254-1998

- FCC Title 47 CFR, Part 15 Class B ⁽¹⁾

- ICES-003, Issue 3

- VCCI-B

- AS/NZ 3548:1995

Products bearing the CE marking⁽²⁾ also comply with:

IEC 61000-3-2:1995 / EN 61000-3-2:1995. + A14

Those products comply with the requirements of the following Directives and carry the CE-marking accordingly:
EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC, both amended by the Directive 93/68/EEC.

⁽¹⁾ This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

a- This device may not cause harmful interference, and
b- This device must accept any interference received, including interference that may cause

undesired operation.

⁽²⁾ All products sold in the European Economic Area (EEA) bear the CE marking.

Grenoble
August 2001

Didier CABARET
Quality Manager



USA contact: Hewlett Packard Company,
Corporate Product Regulations Manager,
3000 Hanover Street,
Palo Alto, CA 94304.
(Phone (+1) (650) 857-1501)

Notice for the USA: FCC Class B Statement

Federal Communications Commission Radio Frequency Interference Statement Warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a different circuit to the one the receiver is connected to.
- Consult your dealer or an experienced radio/TV technician for help.

Safety Warning for USA

If the power cord is not supplied with your monitor, select the proper power cord according to your national electric specifications.

- USA: use a UL listed type SVT detachable power cord

Notice for Canada

This Class "B" digital apparatus complies with all requirements of the Canadian Interference-Causing Equipment Regulations (ICES.003).

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

X-Ray Radiation Notice

When operating, this product emits x-rays; however, it is well shielded and meets the safety and health requirements of various countries, such as the Radiation Act of Germany and the Radiation Control for Health and Safety Act of the United States. Radiation emitted by this product is less than 0.1 mR/hr (1uSv/hr) at a distance of 10 centimeters from the surface of the cathode ray tube. The x-ray radiation primarily depends on the characteristics of the cathode ray tube and its associated low voltage and high voltage circuitry. Internal controls have been adjusted to ensure safe operation. Only qualified personnel should perform any internal adjustments as specified in the service manual for this product. Replace the cathode ray tube with an identical CRT only.

Notice for Korea

사용자 안내문 (B급기기)
이 기기는 비업무용으로 전자파장해 검정을 받은
기기로서, 주거지역에서는 물론 모든 지역에서
사용할 수 있습니다.

Notice for Germany

Hinweis für Deutschland: Geräuschemission
Lärmangabe nach Maschinenlärmverordnung - 3 GSGV
(Deutschland)
LpA < 70db am Arbeitsplatz normaler Betrieb nach EN27779:
11.92

Notice for Japan (Class B)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準
に基づくクラスB情報技術装置です。この装置は、家庭環境で使用すること
を目的としていますが、この装置がラジオやテレビジョン受信機に近接して
使用されると、受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。



TCO 99

Congratulations! You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (e.g. acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

Approval requirements cover a wide range of issues: environment, ergonomics, usability, emission of electric and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

Below you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development

SE-114 94 Stockholm, Sweden

Fax: +46 8 782 92 07

Email (Internet): development@tco.se

Current information regarding TCO'99 approved and labelled products may also be obtained via the Internet, using the address: <http://www.tco-info.com/>

Environmental requirements

Flame retardants

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative¹ processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium²

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries, the colour-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Mercury²

Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit.

CFCs (freons)

The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead²

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning. The relevant TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

1. Bio-accumulative is defined as substances which accumulate within living organisms
2. Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

